Let’s take a look at soy futures and do a similar thing.

|  |  |
| --- | --- |
| Results of Dickey Test |  |
| Critical Values: |  |
|  | 1%: -3.445 |
|  | 5%: -2.868 |
|  | 10%: -2.570 |
| Test Statistic | -1.851707 |
| p-value | 0.355109 |
| Lags Used | 0 |

It looks like we are going to not reject the null hypothesis that there is a root. This means we are probably looking at a non-stationary series according to the dickey test.

|  |  |
| --- | --- |
| Results of KPSS Test: |  |
| Test Statistic | 20.287009 |
| p-value | 0.010000 |
| Lags Used | 0.000000 |
| Critical Value (10%) | 0.347000 |
| Critical Value (5%) | 0.463000 |
| Critical Value (2.5%) | 0.574000 |
| Critical Value (1%) | 0.739000 |

It looks like we are going to reject the null hypothesis that the series is stationary.

Since both tests show non-stationary results, it looks like we will need to remove a trend as well as have a difference.

If we take a look at the AR(1)

|  |  |
| --- | --- |
| Results of Dickey Test |  |
| Critical Values: |  |
|  | 1%: -3.445 |
|  | 5%: -2.868 |
|  | 10%: -2.570 |
| Test Statistic | -1.529554e+01 |
| p-value | 4.383626e-28 |
| Lags Used | 0 |

|  |  |
| --- | --- |
| Results of KPSS Test: |  |
| Test Statistic | 0.053106 |
| p-value | 0.100000 |
| Lags Used | 0.000000 |
| Critical Value (10%) | 0.347000 |
| Critical Value (5%) | 0.463000 |
| Critical Value (2.5%) | 0.574000 |
| Critical Value (1%) | 0.739000 |

It looks like our AR(1) series is stable.